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# OCCUPATIONAL INJURY AND DISEASE IN ALBERTA

## Exploration
## 1994 to 1998

## Upstream Oil and Gas

## Subsector #1

Alberta
HUMAN RESOURCES AND EMPLOYMENT

**July 1999**

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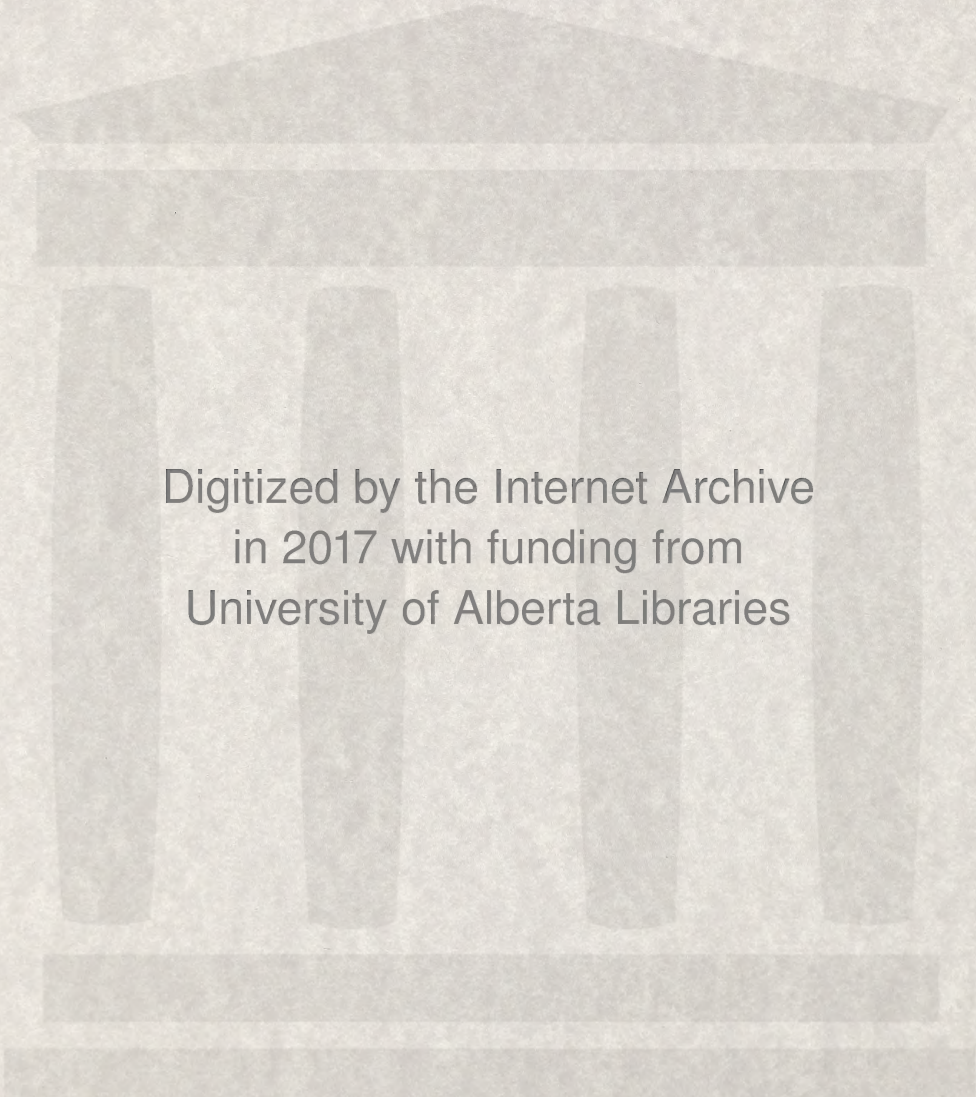

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# 1. Sub-Sector Description

## Sub-Sector # 1: Exploration

### *i. Seismic Geophysical/Mineral Exploration(Industry # 09200)*

This industry involves conducting exploration using seismic technology for the purpose of locating formations beneath the earth's surface that may produce usable minerals such as coal, or oil and gas.

The basic procedure used to locate favourable formation beneath the earth's surface is to send shock waves into the ground, and record the patterns on seismic recording equipment.
When exploring for oil and gas, any one of the following three methods may be employed to create the shock waves:

1. Seismographic - Dynamite exploded in a shot hole;
2. Vibraseismic - tractor or truck mounted vibrators which are released to the ground at certain points; and
3. Vacuum Guns - truck mounted piston strikes base plate to send shock waves through the ground

When exploring for minerals, such as coal, shock waves are created by means of small hand tools. Larger equipment is not required as minerals formations are generally not located as deep below the surface as are oil and gas.
Sound waves are received through instrument referred to as geophones. The geophones are in turn wired to recording instruments that log the sound wave patterns. The data processing and analysis of the obtained information, may or may not, be part of the contract.

This industry does not cover shot hole drilling. This is normally subcontracted out to another company classified in industry 09201. Should an employer conduct drilling in conjunction with exploration, an additional industry is required.

Geophysical Exploration, other than seismic, is classified in industry 86405. The key difference is the generation and recording shock waves.

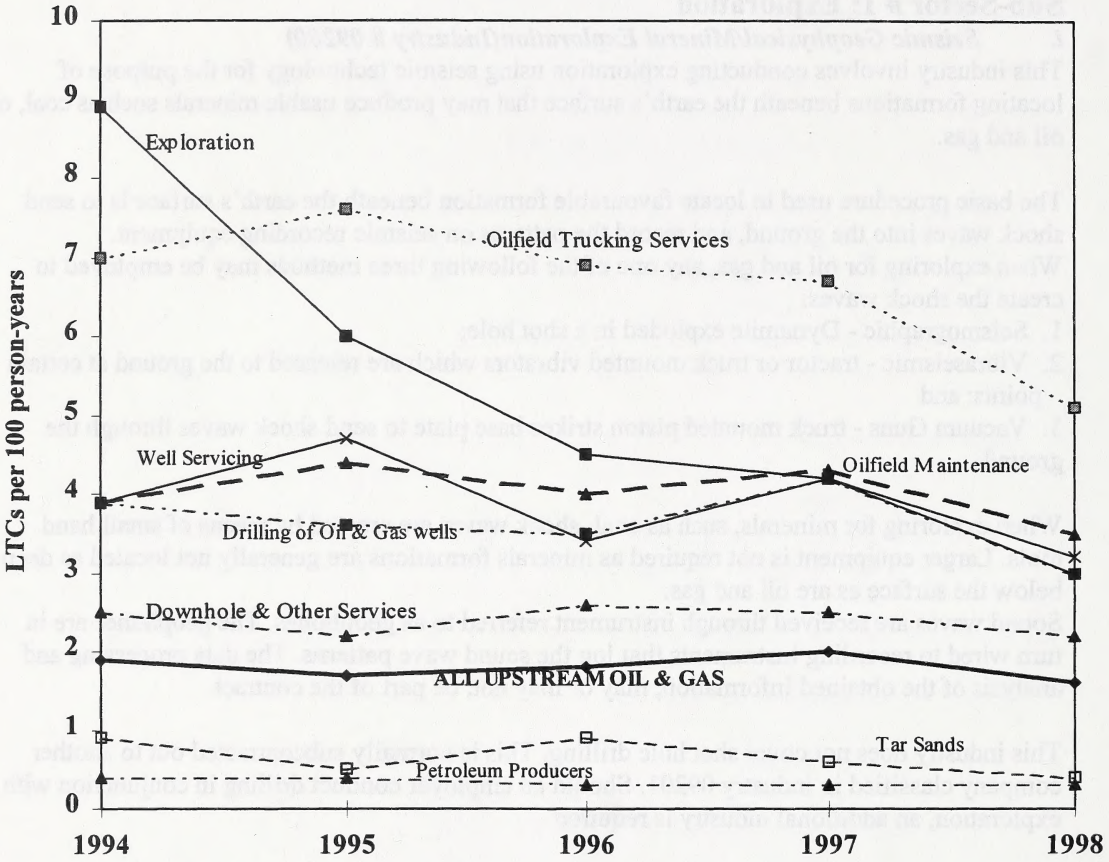
### *ii. Shot Hole Drilling (Industry # 09201)*

The purpose of this industry is to drill bore holes for the purpose of holding explosives used in seismic exploration activities.
Shot hole drilling is performed with a small truck-mounted driller. This is normally a shallow drilling operation, drilling to a depth of 50 to 75 ft. This activity involves drilling only, as an exploration crew is responsible for placing and discharging the explosives. When the explosives are discharged or shot, the vibrations are recorded on a seismograph.

This industry applies specifically to shot hole drilling. Water well drilling is performed in a similar manner but is included under industry 42130.

2.

## Lost-Time Claim Rates
## All Upstream Oil & Gas Subsectors
## Alberta 1994-1998




| Lost-Time Claim Rate | 1994 | 1995 | 1996 | 1997 | 1998 |
|---|---|---|---|---|---|
| All Upstream Oil and Gas | 1.9 | 1.7 | 1.8 | 2.0 | 1.6 |
| Exploration | 8.9 | 6.0 | 4.5 | 4.2 | 3.0 |
| Oilfield Maintenance and Construction | 3.9 | 4.4 | 4.0 | 4.3 | 3.5 |
| Well Services with Service Rigs | 3.9 | 4.7 | 3.4 | 4.2 | 3.2 |
| Drilling of Oil and Gas | 3.9 | 3.6 | 3.5 | 4.2 | 3.0 |
| Downhole & Other Oilfield Services | 2.5 | 2.2 | 2.6 | 2.5 | 2.2 |
| Tar Sands | 0.9 | 0.5 | 0.9 | 0.6 | 0.4 |
| Petroleum Producers | 0.4 | 0.4 | 0.3 | 0.3 | 0.3 |
| Oilfield Trucking Services | 7.0 | 7.6 | 6.9 | 6.7 | 5.1 |

# 3. LTC Rates and Duration Rates

### Exploration

| Year | # of Accounts | Cost | Person Years | Days Lost | Duration Rate | LTCs | LTC Rate |
|---|---|---|---|---|---|---|---|
| 94 | 195 | $1,095,413 | 2,714 | 11,392 | 420 | 242 | 8.9 |
| 95 | 217 | $1,298,580 | 2,531 | 7,349 | 290 | 151 | 6.0 |
| 96 | 222 | $808,650 | 2,605 | 5,097 | 196 | 117 | 4.5 |
| 97 | 221 | $640,472 | 2,880 | 5,898 | 205 | 122 | 4.2 |
| 98 | 228 | $532,225 | 2,711 | 3,967 | 146 | 80 | 3.0 |

## 3.1 LTC Rate By Industry

### Seismic Survey

| Year | # of Accounts | Cost | Person Years | Days Lost | Duration Rate | LTCs | LTC Rate |
|---|---|---|---|---|---|---|---|
| 94 | 63 | $808,905 | 2,103 | 8,667 | 412 | 205 | 9.7 |
| 95 | 71 | $1,079,552 | 2,023 | 4,841 | 239 | 120 | 5.9 |
| 96 | 70 | $285,968 | 2,079 | 2,766 | 133 | 72 | 3.5 |
| 97 | 64 | $471,345 | 2,215 | 4,239 | 191 | 90 | 4.1 |
| 98 | 69 | $186,034 | 2,177 | 2,249 | 103 | 49 | 2.3 |

### Shot Hole Drilling

| Year | # of Accounts | Cost | Person Years | Days Lost | Duration Rate | LTCs | LTC Rate |
|---|---|---|---|---|---|---|---|
| 94 | 132 | $286,508 | 611 | 2,725 | 446 | 37 | 6.1 |
| 95 | 146 | $219,028 | 507 | 2,508 | 494 | 31 | 6.1 |
| 96 | 152 | $522,683 | 526 | 2,331 | 443 | 45 | 8.6 |
| 97 | 157 | $169,127 | 665 | 1,659 | 249 | 32 | 4.8 |
| 98 | 159 | $346,190 | 534 | 1,718 | 322 | 31 | 5.8 |

## 3.2 LTC Rates by Size of Employer:1998

| Size of Employer | # of Accounts | LTCs | Person - Years | LTC Rate |
|---|---|---|---|---|
| A: 0< PYs <=1 | 108 | 3 | 56 | 5.3 |
| B: 1 < PYs < 5 | 60 | 7 | 137 | 5.1 |
| C: 5 <= PYs < 10 | 15 | 4 | 98 | 4.1 |
| D: 10 <= PYs < 20 | 9 | 10 | 123 | 8.2 |
| E: 20 <= PYs < 40 | 10 | 14 | 267 | 5.3 |
| F: 40 <= PYs < 100 | 9 | 22 | 525 | 4.2 |
| G: PYs >=100 | 8 | 20 | 1,507 | 1.3 |
| H: Invalid | 9 | N/A | 0 | N/A |
| Total | 228 | 80 | 2,711 | 3.0 |

# 4. Analysis of the Lost-Time Claims

## 4.1 Nature of Injury

| LOST-TIME CLAIMS ALBERTA: 1994 TO 1998 | OCCURRENCE YEAR | | | | | Total | |
|---|---|---|---|---|---|---|---|
| | 94 | 95 | 96 | 97 | 98 | Number | Percent |
| SPRAIN, STRAIN | 120 | 77 | 45 | 51 | 41 | 334 | 46.9 |
| FRACTURE & DISLOCATION | | | | | | | |
| FRACTURE | 24 | 18 | 12 | 16 | 10 | 80 | 11.2 |
| DISLOCATION | 4 | 5 | 3 | 3 | 2 | 17 | 2.4 |
| SUBTOTAL | 28 | 23 | 15 | 19 | 12 | 97 | 13.6 |
| BRUISE, CONTUSION, CRUSHING | 27 | 10 | 16 | 10 | 6 | 69 | 9.7 |
| OTHER INJURY | 7 | 3 | 14 | 15 | 5 | 44 | 6.2 |
| OTHER DISEASE | 7 | 5 | 8 | 9 | 4 | 33 | 4.6 |
| CUT, LACERATION, PUNCTURE | 8 | 3 | 5 | 5 | 3 | 24 | 3.4 |
| INFLAMED/IRRITATED JOINTS,ETC. | 9 | 7 | 2 | 3 | 2 | 23 | 3.2 |
| MULTIPLE INJURIES | 9 | 8 | 1 | 1 | 1 | 20 | 2.8 |
| ALL OTHER NATURES, UNS | 27 | 15 | 11 | 9 | 6 | 68 | 9.6 |
| Total | 242 | 151 | 117 | 122 | 80 | 712 | 100.0 |

## 4.2 Part of Body Affected

| LOST-TIME CLAIMS ALBERTA: 1994 TO 1998 | OCCURRENCE YEAR | | | | | Total | |
|---|---|---|---|---|---|---|---|
| | 94 | 95 | 96 | 97 | 98 | Number | Percent |
| BACK | | | | | | | |
| LUMBAR (LOWER BACK) | 34 | 21 | 4 | 5 | 1 | 65 | 9.1 |
| OTHER PART | 22 | 15 | 17 | 21 | 18 | 93 | 13.1 |
| SUBTOTAL | 56 | 36 | 21 | 26 | 19 | 158 | 22.2 |
| LEG(S) | | | | | | | |
| KNEE | 36 | 26 | 20 | 13 | 9 | 104 | 14.6 |
| OTHER PART | 9 | 1 | 3 | 3 | 4 | 20 | 2.8 |
| SUBTOTAL | 45 | 27 | 23 | 16 | 13 | 124 | 17.4 |
| OTHER TRUNK | | | | | | | |
| SHOULDER(S) | 19 | 8 | 5 | 12 | 4 | 48 | 6.7 |
| CHEST-INCLUDES INTERNAL ORGANS | 8 | 5 | 5 | 6 | 3 | 27 | 3.8 |
| HIP(S)-INCUDES PELVIC ORGANS | 2 | 3 | 4 | 3 | 3 | 15 | 2.1 |
| OTHER PART | 3 | 1 | 1 | 2 | 1 | 8 | 1.1 |
| SUBTOTAL | 32 | 17 | 15 | 23 | 11 | 98 | 13.8 |
| ANKLE(S) & FOOT(FEET)-NOT TOES | | | | | | | |
| ANKLE(S) | 21 | 17 | 8 | 8 | 2 | 56 | 7.9 |
| FOOT(FEET)-NOT ANKLES OR TOES | 12 | 5 | 7 | 6 | 5 | 35 | 4.9 |
| SUBTOTAL | 33 | 22 | 15 | 14 | 7 | 91 | 12.8 |
| OTHER HEAD, NECK | | | | | | | |
| NECK | 13 | 9 | 6 | 3 | 3 | 34 | 4.8 |
| OTHER PART | 8 | 1 | 1 | 4 | 2 | 16 | 2.2 |
| SUBTOTAL | 21 | 10 | 7 | 7 | 5 | 50 | 7.0 |
| WRIST(S) & HAND(S)-NOT FINGERS | | | | | | | |
| WRIST(S) | 6 | 5 | 2 | 4 | 5 | 22 | 3.1 |
| HAND(S)-NOT WRISTS OR FINGERS | 9 | 5 | 4 | 2 | 1 | 21 | 2.9 |
| SUBTOTAL | 15 | 10 | 6 | 6 | 6 | 43 | 6.0 |

(CONTINUED)

## Part of Body Affected (continued)

| LOST-TIME CLAIMS ALBERTA: 1994 TO 1998 | OCCURRENCE YEAR | | | | | Total | |
|---|---|---|---|---|---|---|---|
| | 94 | 95 | 96 | 97 | 98 | Number | Percent |
| FINGER(S) | 14 | 5 | 4 | 9 | 5 | 37 | 5.2 |
| ARM(S)(ABOVE WRIST) | 7 | 10 | 5 | 3 | 4 | 29 | 4.1 |
| MULTIPLE MAJOR BODY PARTS | 7 | 5 | 5 | 6 | 3 | 26 | 3.7 |
| EYE(S)-OPTIC NERVE,VISION | 4 | 4 | 5 | 4 | 3 | 20 | 2.8 |
| ALL OTHER PARTS, UNS | 8 | 5 | 11 | 8 | 4 | 36 | 5.1 |
| Total | 242 | 151 | 117 | 122 | 80 | 712 | 100.0 |

## 4.3 Source of Injury

| LOST-TIME CLAIMS ALBERTA: 1994 TO 1998 | OCCURRENCE YEAR | | | | | Total | |
|---|---|---|---|---|---|---|---|
| | 94 | 95 | 96 | 97 | 98 | Number | Percent |
| VEHICLES | | | | | | | |
| HIGHWAY VEHICLES (POWERED) | 37 | 22 | 14 | 14 | 10 | 97 | 13.6 |
| ALL TERRAIN VEHICLES | 8 | 5 | 6 | 10 | 4 | 33 | 4.6 |
| OTHER SOURCE | 3 | 3 | 6 | 3 | 2 | 17 | 2.4 |
| SUBTOTAL | 48 | 30 | 26 | 27 | 16 | 147 | 20.6 |
| SOURCE-UNS | 39 | 27 | 25 | 30 | 17 | 138 | 19.4 |
| BODILY MOTION | | | | | | | |
| FREE MOVEMENT (EG. RUNNING) | 21 | 9 | . | . | . | 30 | 4.2 |
| SLIPPING | 9 | 6 | . | . | . | 15 | 2.1 |
| OTHER SOURCE | 10 | 18 | 20 | 11 | 7 | 66 | 9.3 |
| SUBTOTAL | 40 | 33 | 20 | 11 | 7 | 111 | 15.6 |
| WORKING SURFACES | | | | | | | |
| GROUND (OUTDOORS) | 26 | 15 | 10 | 8 | 2 | 61 | 8.6 |
| OTHER SOURCE | 11 | 6 | 4 | 8 | 6 | 35 | 4.9 |
| SUBTOTAL | 37 | 21 | 14 | 16 | 8 | 96 | 13.5 |
| PLANTS, TREES, VEGETATION | 10 | 4 | 2 | 7 | 5 | 28 | 3.9 |
| BOXES, CONTAINERS | 8 | 8 | 2 | 5 | 4 | 27 | 3.8 |
| METAL ITEMS-NEC | 10 | 7 | 5 | 4 | 1 | 27 | 3.8 |
| MECHINICAL POWER APPARATUS | 6 | 3 | 4 | 2 | 2 | 17 | 2.4 |
| HANDTOOLS-UNPOWERED | 5 | 2 | 2 | 2 | 4 | 15 | 2.1 |
| ALL OTHER SOURCES | 39 | 16 | 17 | 18 | 16 | 106 | 14.9 |
| Total | 242 | 151 | 117 | 122 | 80 | 712 | 100.0 |

## 4.4 Type of Event

| LOST-TIME CLAIMS<br>ALBERTA: 1994 TO 1998 | OCCURRENCE YEAR | | | | | Total | |
|---|---|---|---|---|---|---|---|
| | 94 | 95 | 96 | 97 | 98 | Number | Percent |
| OVEREXERTION | | | | | | | |
| LIFTING OBJECTS | 18 | 12 | 4 | 10 | 5 | 49 | 6.9 |
| PULLING/PUSHING OBJECTS | 4 | 4 | 4 | 3 | 7 | 22 | 3.1 |
| OTHER TYPE | 12 | 12 | 4 | 10 | 6 | 44 | 6.2 |
| SUBTOTAL | 34 | 28 | 12 | 23 | 18 | 115 | 16.2 |
| BODILY REACTION | | | | | | | |
| REACTION FROM INVOLUNTARY MOTION | 21 | 13 | 12 | 4 | 4 | 54 | 7.6 |
| REACTION FROM VOLUNTARY MOTION | 19 | 12 | 5 | 6 | 2 | 44 | 6.2 |
| OTHER TYPE | . | 8 | 4 | 1 | 3 | 16 | 2.2 |
| SUBTOTAL | 40 | 33 | 21 | 11 | 9 | 114 | 16.0 |
| VEHICLE INCIDENTS | | | | | | | |
| HIGHWAY-OVERTURNED VEHICLE | 6 | 6 | 1 | 5 | 4 | 22 | 3.1 |
| OTHER TYPE | 31 | 20 | 21 | 14 | 6 | 92 | 12.9 |
| SUBTOTAL | 37 | 26 | 22 | 19 | 10 | 114 | 16.0 |
| FALL ON SAME LEVEL | | | | | | | |
| FALL TO WALKWAY, WORKING SURFACE | 19 | 8 | 7 | 8 | 5 | 47 | 6.6 |
| FALL ONTO OR AGAINST OBJECTS | 10 | 5 | 3 | 3 | 2 | 23 | 3.2 |
| OTHER TYPE | 4 | 1 | . | . | . | 5 | 0.7 |
| SUBTOTAL | 33 | 14 | 10 | 11 | 7 | 75 | 10.5 |
| FALL FROM ELEVATION | 18 | 10 | 9 | 10 | 3 | 50 | 7.0 |
| STRUCK BY | 13 | 8 | 9 | 7 | 9 | 46 | 6.5 |
| CAUGHT IN, UNDER RO BETWEEN | 16 | 7 | 5 | 5 | 7 | 40 | 5.6 |
| STRUCK AGAINST | 13 | 4 | 3 | 4 | 2 | 26 | 3.7 |
| ALL OTHER TYPES, UNS | 38 | 21 | 26 | 32 | 15 | 132 | 18.5 |
| Total | 242 | 151 | 117 | 122 | 80 | 712 | 100.0 |

## 4.5 Duration of Disability

| LOST-TIME CLAIMS<br>ALBERTA: 1994 TO 1998 | OCCURRENCE YEAR | | | | | Total | |
|---|---|---|---|---|---|---|---|
| | 94 | 95 | 96 | 97 | 98 | Number | Percent |
| 01 - 05 DAYS LOST | 43 | 32 | 14 | 34 | 9 | 132 | 18.5 |
| 06 - 10 DAYS LOST | 40 | 26 | 18 | 17 | 13 | 114 | 16.0 |
| 11 - 15 DAYS LOST | 22 | 6 | 5 | 10 | 3 | 46 | 6.5 |
| 16 - 20 DAYS LOST | 16 | 8 | 8 | 6 | 6 | 44 | 6.2 |
| 21 - 30 DAYS LOST | 23 | 10 | 18 | 13 | 11 | 75 | 10.5 |
| 31 - 40 DAYS LOST | 21 | 14 | 9 | 9 | 6 | 59 | 8.3 |
| 41 - 50 DAYS LOST | 12 | 10 | 6 | 4 | 8 | 40 | 5.6 |
| 51 OR MORE DAYS LOST | 63 | 40 | 32 | 26 | 20 | 181 | 25.4 |
| DAYS LOST-UNSPECIFIED, 0 | 2 | 5 | 7 | 3 | 4 | 21 | 2.9 |
| Total | 242 | 151 | 117 | 122 | 80 | 712 | 100.0 |

# 5. Characteristics of the Injured Worker

## 5.1 Occupation of Injured Worker

| LOST-TIME CLAIMS ALBERTA: 1994 TO 1998 | OCCURRENCE YEAR | | | | | Total | |
|---|---|---|---|---|---|---|---|
| | 94 | 95 | 96 | 97 | 98 | Number | Percent |
| PROFESSIONAL | | | | | | | |
| ARCHITECTURE & ENGINEERING-NEC | 66 | 35 | 19 | 26 | 15 | 161 | 22.6 |
| ARCHITECTURAL & ENGINEERING TECHS | 19 | 2 | 4 | 4 | . | 29 | 4.1 |
| OTHER OCCUPATION | 2 | 3 | 4 | 4 | 2 | 15 | 2.1 |
| SUBTOTAL | 87 | 40 | 27 | 34 | 17 | 205 | 28.8 |
| OIL & GAS FIELD, MINING | | | | | | | |
| ROTARY WELL DRILLING | 22 | 20 | 22 | 24 | 24 | 112 | 15.7 |
| OIL & GAS, MINING-NEC | 7 | 8 | 4 | 2 | 1 | 22 | 3.1 |
| OTHER OCCUPATION | 14 | 10 | 5 | 4 | 4 | 37 | 5.2 |
| SUBTOTAL | 43 | 38 | 31 | 30 | 29 | 171 | 24.0 |
| TRANSPORT OPERATORS | | | | | | | |
| TRUCK DRIVERS | 22 | 13 | 9 | 2 | 5 | 51 | 7.2 |
| OTHER OCCUPATION | . | 1 | 1 | . | 1 | 3 | 0.4 |
| SUBTOTAL | 22 | 14 | 10 | 2 | 6 | 54 | 7.6 |
| OCCUPATION-NEC | | | | | | | |
| LABOR-NEC | 4 | 2 | 2 | 7 | 3 | 18 | 2.5 |
| OTHER OCCUPATION | 4 | . | . | . | 1 | 5 | 0.7 |
| SUBTOTAL | 8 | 2 | 2 | 7 | 4 | 23 | 3.2 |
| ALL OTHER OCCUPATIONS, UNS | 82 | 57 | 47 | 49 | 24 | 259 | 36.4 |
| Total | 242 | 151 | 117 | 122 | 80 | 712 | 100.0 |

## 5.2 Age of Injured Worker

| LOST-TIME CLAIMS ALBERTA: 1994 TO 1998 | OCCURRENCE YEAR | | | | | Total | |
|---|---|---|---|---|---|---|---|
| | 94 | 95 | 96 | 97 | 98 | Number | Percent |
| 15-19 YEARS | 33 | 21 | 11 | 17 | 6 | 88 | 12.4 |
| 20-24 YEARS | 77 | 53 | 31 | 35 | 29 | 225 | 31.6 |
| 25-34 YEARS | 87 | 51 | 47 | 48 | 26 | 259 | 36.4 |
| 35-44 YEARS | 36 | 19 | 22 | 19 | 12 | 108 | 15.2 |
| 45-54 YEARS | 5 | 3 | 5 | 2 | 4 | 19 | 2.7 |
| 55-64 YEARS | 1 | 3 | 1 | 1 | 3 | 9 | 1.3 |
| AGE-UNSPECIFIED | 3 | 1 | . | . | . | 4 | 0.6 |
| Total | 242 | 151 | 117 | 122 | 80 | 712 | 100.0 |

## 5.3 Length of Time Employed

| LOST-TIME CLAIMS ALBERTA: 1994 TO 1998 | OCCURRENCE YEAR | | | | | Total | |
|---|---|---|---|---|---|---|---|
| | 94 | 95 | 96 | 97 | 98 | Number | Percent |
| A. LESS THAN 1 MONTH | 87 | 54 | 33 | 39 | 27 | 240 | 33.7 |
| B. 1 MONTH TO < 6 MONTHS | 89 | 47 | 27 | 31 | 25 | 219 | 30.8 |
| C. 6 MONTHS TO < 1 YEAR | 12 | 12 | 5 | 5 | 6 | 40 | 5.6 |
| D. 1 YEAR OR MORE | 23 | 20 | 14 | 16 | 7 | 80 | 11.2 |
| E. TIME-UNSPECIFIED | 31 | 18 | 38 | 31 | 15 | 133 | 18.7 |
| Total | 242 | 151 | 117 | 122 | 80 | 712 | 100.0 |

## 5.4 Gender of Injured Worker

| LOST-TIME CLAIMS ALBERTA: 1994 TO 1998 | OCCURRENCE YEAR | | | | | Total | |
|---|---|---|---|---|---|---|---|
| | 94 | 95 | 96 | 97 | 98 | Number | Percent |
| MALE | 236 | 145 | 114 | 119 | 78 | 692 | 97.2 |
| FEMALE | 4 | 4 | . | 2 | 2 | 12 | 1.7 |
| GENDER-UNSPECIFIED | 2 | 2 | 3 | 1 | . | 8 | 1.1 |
| Total | 242 | 151 | 117 | 122 | 80 | 712 | 100.0 |

## 6. Number of Employers that Received/Renewed a CoR in 1998

| | Certified Employers | Cert. & Uncert. (# of Accounts) | % Certified |
|---|---|---|---|
| **Sub-Sector # 1** | | | |
| Industry 09200-Seismic Geophysical/Mineral Exploration | 10 | 69 | |
| Industry 09201-Shot Hole Drilling | 3 | 159 | |
| **Exploration** | **13** | **228** | **5.7%** |
| **UPSTREAM OIL & GAS SECTOR** | **119** | **7,205** | **1.7%** |

## 7. Cost of Claims, Payroll & Premiums

| | Occurrence Year | | | | |
|---|---|---|---|---|---|
| | **1994** | **1995** | **1996** | **1997** | **1998** |
| **Transaction Year** | | | | | |
| **1994** | $981,922 | | | | |
| **1995** | $288,007 | $1,235,119 | | | |
| **1996** | $228,829 | $348,502 | $721,136 | | |
| **1997** | $259,273 | $131,278 | $213,910 | $602,086 | |
| **1998** | $39,931 | $97,694 | $233,592 | $194,082 | $483,556 |
| **Total Cost** | $1,797,962 | $1,812,593 | $1,168,638 | $796,168 | $483,556 |
| **Total Payroll** | $69,825,528 | $66,526,253 | $65,681,303 | $81,404,729 | $79,295,700 |
| **Total Premiums** | $4,843,296 | $3,905,176 | $2,812,409 | $3,738,680 | $2,270,861 |

The above cost for claims, payroll and premiums are for the five year period 1994-1998. The data is as at July, 1999.

The claim cost mount reflect paid costs on claims which have occurred in the five year period. These paid cost are tracked by year of occurrence and year that the cost were transacted.

The payroll have been totaled for each year. The premium is the total of employer's premiums paid for each year.

# 8. Occupational Fatalities

An occupational fatality is the death of a worker which results from a work-related incident or exposure. Alberta Labour classifies occupational fatalities into three general types: motor vehicle incident, workplace incident and occupational diseases. Each is described in detail below.

*Motor Vehicle Incident*
Motor vehicle incident typically involve highway vehicles operating on public roads in which the fatally injured worker was either the driver or a passenger. This category also includes fatalities involving air plane crashes, train crashes, helicopter crashes. etc.

*Workplace Incident*
Fatal workplace incidents consists of cases in which the worker dies at a work site, or as a result of injuries sustained at a work site. It is this type of fatality that Alberta Labour may be responsible for investigating.

*Occupational Diseases*
Occupational disease fatalities consist mostly of recognized occupational disease, that is, disease known to be primarily or exclusively work-related (e.g. asbestosis, black lung disease). Occupational diseases are frequently diagnosed many years after the initial or crucial exposure to the toxic substance, and in such cases it is very difficult to determine when the fatal exposure occurred. Thus, the occupational disease category, should not be interpreted to reflect present work site hazardous conditions or exposures.

Each year the Workers' Compensation Board (WCB) accepts some occupational fatality claims for compensation. Claims accepted in a particular year does not imply the fatalities occurred in that year.

**Description of Exploration Fatalities**
**Accepted by the WCB**
**Alberta, 1992-1998**

| Year | Occupational Disease | | Motor Vehicle incident | | Workplace Incident | | Total | |
|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % |
| 1992 | 0 | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 100 |
| 1993 | 0 | 0 | 1 | 100.0 | 0 | 0.0 | 1 | 100 |
| 1994 | 0 | 0 | 0 | 0.0 | 1 | 100.0 | 1 | 100 |
| 1995 | 0 | 0 | 5 | 100.0 | 0 | 0 | 5 | 100 |
| 1996 | 0 | 0 | 2 | 100.0 | 0 | 0 | 2 | 100 |
| 1997 | 0 | 0 | 1 | 100.0 | 0 | 0.0 | 1 | 100 |
| 1998 | 0 | 0 | 1 | 100.0 | 0 | 0.0 | 1 | 100 |
| Total | 0 | 0.0 | 10 | 90.9 | 1 | 9.1 | 11 | 100 |

## 9. OHS Investigated Occupational Fatalities 1987-1998

| | | | |
|---|---|---|---|
| YEAR: | 1987 | AGE: | 36 |
| OCCUPATION: | Driller | FILE: | 0561 |
| INDUSTRY: | Shot Hole Drilling Operations | | |
| EXPERIENCE: | 15 years | | |

DESCRIPTION: Two workers were operating a leased top drive auger-type seismic rig (on rubber) on a petroleum company lease. The two were drilling shot holes when the equipment experienced difficulties. The driller stopped the equipment, left the controls and walked to the rotary table. The left side of the rotary table was raised about 450 mm, but the right side, which should have been at the same level, was raised approximately 150 mm higher. The driller placed his head sideways under the rotary table in an attempt to determine the problem. The rotary table, which was not secured by safety chains, dislodged and fell onto the driller's head, causing fatal injuries.

| | | | |
|---|---|---|---|
| YEAR: | 1988 | AGE: | 31 |
| OCCUPATION: | Driller | FILE: | 0599 |
| INDUSTRY: | Seismic Operations | | |
| EXPERIENCE: | 6 seasons | | |

DESCRIPTION: A seismic company was involved in the drilling and loading (with explosives) of holes in a newly cleared seismic line.Two workers operating a Gardner Denver seismic rig, drilled seven holes without any incident. Before drilling the eighth hole, the workers changed the hydraulic break-out unit on the rotary table and replaced it with a manual system referred to as the "J-bowl". Following a short break, the two workers proceeded to stab a new stem into the kelly pin. It was at this time, that the driller got his right hand caught in the J-bowl assembly. The driller was tangled up in the drill stem and thrown 4.6 metres to his death.

| | | | |
|---|---|---|---|
| YEAR: | 1989 | AGE: | 37 |
| OCCUPATION: | Truck Driver | FILE: | 0636 |
| INDUSTRY: | Shot Hole Drilling Operations | | |
| EXPERIENCE: | 17 years | | |

DESCRIPTION: A seismic drilling company's truck driver was fatally injured when the Nodwell all-terrain vehicle he was loading on to a low-boy slipped off the deck and pinned him under the capsized machine. The deceased was in the cab operating the Nodwell's steering controls with the door open while it was being winched on to the low-boy's deck by another truck driver. The deceased was either thrown from the Nodwell's cab on impact, or attempted to jump free, but was pinned by the top frame of the doorway across his back with his face down outside the unit.

***There were no OHS Investigated fatalities for the period 1993-1998***

# Appendix A: Terms, Definitions, and Formulas

**Lost-Time Claim**

A lost-time claim (LTC) is a claim for an occupational injury or disease which disables the worker beyond the day of injury. Included are claims for which wages compensation are paid, permanent disability claims, fatalities, and cases in which the injured worker is assigned light duties or other modified work.

**Person-Years**

Person-year estimates are calculated from wage and payroll data provided by account holders to the WCB. Alberta Labour uses these data to estimate. An average industry wage, and uses the average industry wage and employer payroll data to estimate person-years foe each employer and each industry. One person-year ie equivalent to one full-time worker working for one year, and can be assumed to equal 2,000 hours worked.

**LTC Rate**

The lost-time claim (LTC) rate is calculated by dividing the number of lost-time claims by the person-year estimate, and multiplying the result by 100. The LTC rate represent the probability or risk of disabling injury or disease to a worker during a period of one year's work. Comparisons of LTC rates between industries, or between years, can be used to indicate increases, decreases, or differences in this risk.

$$\text{LTC Rate} = \frac{\text{Number of LTCs X 100}}{\text{Estimated Person-years}}$$

**Duration (Days Lost)**

The duration of disability is the number of days following the injury or disease for which the worker was disabled, and unable to perform normal work duties. This information is obtained for this report from data on compensation days paid on each claim from WCB. Alberta Labour obtains these data on March 31 of the year following the claim year, and does not update the information, even though many injured workers continue to be disabled beyond this date. As a result, the duration information reported here underestimates the true impact of lost-time injury and disease.

**Duration Rate**

The duration rate is calculated by dividing the number of work days lost (disability days) by the person-year estimate, and multiplying by 100. The result is expressed as "days lost per 100 person-years worked", and indicates, in part, the economic impact of occupational injury and disease. Duration rates are not recommended as reliable indicators of full economic cost. In addition, readers are warned that duration rates are highly unstable when based on only a few lost-time claims; it is recommended that the duration rate not be calculated based upon fewer than 30 lost-time claims.

$$\text{Duration Rate} = \frac{\text{Disability Days X 100}}{\text{Estimated Person-Years}}$$

**WCB Accepted Fatality**

An occupational fatality is the death of a worker which result from a work-related incident or exposure and which has been accepted by the WCB for compensation. A fatality is counted in the year it is accepted.

**NEC**

Means "Not Elsewhere Classified"

**UNS**

Means "Unspecified"

## Appendix B : Upstream Oil and Gas 1998 Industry Codes

**Sub-Sector 1:** **Exploration**
Industries:
09200~Seismic Geophysical/Mineral Exploration
09201~Shot Hole Drilling

**Sub-Sector 2:** **Oilfield Maintenance and Construction**
Industries:
06304~Oilfield Construction and/or Maintenance

**Sub-Sector 3:** **Well Servicing With Service Rigs**
Industries:
09903~Well servicing with Service Rigs including Power Swivels

**Sub-Sector 4:** **Drilling of Oil and gas Wells**
Industries:
09600~Drilling of Oil & Gas Wells

**Sub-Sector 5:** **Downhole & Other Oilfield Services**
Industries
06305~Field Production Operators
06306~Vacuum Removal of Waste
09900~Mud Logging
09902~Pressure Cleaning Services
09904~Rathole Drilling and Rig Anchoring
09911~Oilfield Downhole Services
09915~Well Casing Services
09921~Servicing Christmas Trees On Oil Wells
09927~Liquid Waste Treatment & Disposal

**Sub-Sector 6:** **Tar Sands**
Industries:
06600~Mining & Processing of Bituminous Sand
06601~Research/Development, Oil Sands and Heavy Oil Recovery

**Sub-Sector 7:** **Oil & Gas Exploration/Development**
Industries:
06300~Oil and Gas Exploration & Development-Upstream Operations

**Sub-Sector 8:** **Oilfield Trucking Services**
Industries:
50720~Oilfield Trucking Services

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